Rhode Island Department of HEALTH

PROTECT YOUR DRINKING WATER

Safe and healthy lives in safe and healthy communities

Deerfield Commons

Pollution Risk Assessment Results

Deerfield Commons (PWSID 2980258) is a community water system in North Smithfield that serves approximately 95 people through 2 service connections. The water system consists of three active drilled wells and one inactive well. Water flows from the three wells to two water tanks before distribution. The last sanitary survey was July 27, 1999. For further information contact Robert Gaudreau at Deerfield Commons/Property Advisory Group, 4 Cathedral Square, Providence, RI 02903.

The Source Protection Area consists of three overlapping circles of about 370 acres (see Figure 2 on back). It is wooded with moderate to high density residential development and some industrial and commercial land use (see Table 1 on back).

Sample Summary (for the previous five years)

- ▲ Bacteria were detected in one of the wells. The well was disinfected, and subsequent sampling showed that the problem had been corrected.
- ▲ Nitrate levels in groundwater have been consistently low.
- ▲ No violations of the standards for other regulated contaminants have been identified. However, there have been detections greater than half the levels considered acceptable by US EPA. This indicates the need for continued monitoring and may indicate the need for future management and/or treatment.

This report summarizes assessment results for this water system. The assessment identifies both known and potential sources of pollution occurring in the source protection area, and ranks the water source based on the likelihood of future contamination. The goal of this study is to help water suppliers, local officials, residents and consumers to learn more about source water protection. Because water quality is directly related to land use activities, everyone living or working in the source protection area has a role to play in keeping local water supplies safe.

Source Water

The focus of these assessments is on public drinking water supply "source" areas—the *wellhead protection area* that recharges a well or the *watershed* that drains to a surface water reservoir. Source water is untreated water from streams, lakes, reservoirs, or underground aquifers that is used to supply drinking water.

Source Water Assessments were conducted by the R.I. Department of Health in collaboration with the University of Rhode Island Cooperative Extension (URI CE) under the Rhode Island Source Water Assessment Program. This is part of a national initiative, established under the 1996 Amendments to the Federal Safe Drinking Water Act (SDWA), to foster more comprehensive protection of drinking water supplies at the local, state, and national levels.

Susceptibility To Contamination		
Low	√ Moderate	High

Note: A ranking of **MODERATE** means that the water could become contaminated one day. Protection efforts are necessary to assure continued water quality.

POLLUTION RISKS:

- ▲ High-intensity residential land use is densely clustered near the wells.
- ▲ Several roads are located near the wells, increasing the risk of hazardous material spills and road salt contamination.
- ▲ An underground storage tank is located inside the source protection area.
- ▲ Plastics manufacturers and machine shops are a potential source of contamination within the area.
- ▲ Sampling indicates that the source is vulnerable to contamination.
- ▲ Part of the protection area is located in Massachusetts and is not under Rhode Island's jurisdiction.

PROTECTION OPPORTUNITIES:

- ▲ Some of the source protection area consists of undeveloped forestland.
- ▲ The town can implement land use controls and programs to protect this source protection area from high-intensity development.
- ▲ The town and supplier can encourage industries and businesses to use best management practices in handling potential contaminants.
- ▲ Residents can follow the guidelines on the back to reduce the impact of household contaminants.

Table 1. High-intensity land uses identified within the source water protection area that have the potential to contaminate drinking water.

Land Use Category	Associated Contaminants[1]	% of Protection Area
% Residential	Nutrients, Pathogens, VOCs, SOCs	41.2%
% Commercial, Industrial, Institutional	VOCs, SOCs, Solvents, Inorganics	11.5%
% Intensive Agriculture	Nutrients, Pathogens, VOCs, SOCs	0.0%

[1]Potential contaminants include nutrients (nitrates and phosphorus from fertilizers and human and animal waste), pathogens (bacteria, viruses, and other microorganisms that can cause disease); volatile organic compounds (VOCs) found in fuels and solvents; synthetic organic compounds (SOCs), such as pesticides and plastics; and inorganics, including metals and other substances that can harm human health in high concentrations.

Figure 2. Areas of high-intensity land use are shown in dark gray.

What You Can Do To Protect Water Quality

Public Water Suppliers:

- Implement all recommendations in the latest Sanitary Survey.
- Protect undeveloped land within the wellhead or watershed protection area. Work with municipal boards and government as needed to implement land use protection measures and education programs.
- Post signs alerting public to Wellhead or Watershed Protection Area.
- Inspect water supply and protection area regularly for potential pollution sources.

Municipal Boards and Government:

- Develop a groundwater protection plan and ordinance and supporting protective zoning regulations, such as limits of paved surface areas within new developments.
- Incorporate groundwater and source water protection goals into the Comprehensive Plan.
- Implement on-site wastewater management or sewer maintenance plans and ordinances.
- Develop programs for land acquisition, conservation easements, or other critical lands protection.
- Adopt a stormwater management plan and ordinance.
- Establish a community education and outreach program that promotes residential pollution prevention and best management practices for the Public Works Department.

Residents:

- Inspect septic systems annually and pump as needed.
- Replace/repair cesspools and failing septic systems.
- Reduce fertilizer and pesticide use.
- Reduce stormwater runoff by limiting paved surface areas and maintaining good vegetative cover.
- Pick up after your pets.
- Properly use, store, and dispose of hazardous products.
- Properly maintain motor vehicles and fuel storage tanks. Consider replacing underground storage tanks with properly contained above-ground tanks.
- Check all municipal laws that may apply.

Farmers and Landowners: *Develop conservation plans on agricultural and forest lands that:*

- Reduce soil erosion, sediment, and stormwater runoff.
- Address proper nutrient, manure, pest, and irrigation water management.
- Address proper fuel storage and equipment maintenance.
- Conserve water, improve soil health, and protect surrounding natural resources.
- Check all federal and state laws that apply.

Commercial and Industrial Businesses:

Adhere to all laws, regulations, and recommended practices for:

- Hazardous waste management
- Above- and underground storage tanks
- Wastewater discharge
- Floor drains
- Proper training for all employees

For More Information

R.I. Department of Health, Office of Drinking Water Quality, (401) 222-6867, www.healthri.org/environment/dwq/Home.htm
URI CE Home*A*Syst Program (401) 874-5398, www.uri.edu/ce/wq
URI CE Nonpoint Education for Municipal Officials (401) 874-2138, www.uri.edu/ce/wq
Local Municipal Boards and Government, contact town/city hall
R.I. DEM Office of Water Resources (401) 222-4700, www.state.ri.us/DEM/programs/benviron/water/index.htm
USDA Natural Resources Conservation Service and Conservation District Offices, (401) 828-1300, www.ri.nrcs.usda.gov

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